



## **MATERIAL SAFETY DATA SHEET**

*For 1Shot/Chromatic® Liquid Coatings and Associated Liquid Materials*

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**PREPARED BY:** Health, Safety and Environmental Coordinator

|                                         |                |          |
|-----------------------------------------|----------------|----------|
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| INTERNATIONAL TRANSPORTATION ACCIDENTS: | 1-703-527-3887 | Chemtrec |

|                 |            |          |     |             |              |
|-----------------|------------|----------|-----|-------------|--------------|
| Revision Date : | 10/02/2007 | Version: | 8.3 | Supersedes: | All Previous |
|-----------------|------------|----------|-----|-------------|--------------|

### **I. CHEMICAL PRODUCT IDENTIFICATION**

**Product Name:** "1 SHOT®" Lettering Enamels (100-L through 199-L)

### **II. COMPOSITION/INFORMATION ON INGREDIENTS - (EXPOSURE LIMITS - SEE SECTION VIII)**

| INGREDIENT NAME                | CAS #      | %    |
|--------------------------------|------------|------|
| Stoddard solvent               | 8052-41-3  | < 40 |
| 1,2,4-Trimethylbenzene         | 95-63-6    | < 5  |
| Light Aromatic Solvent Naphtha | 64742-95-6 | < 5  |
| Xylene                         | 1330-20-7  | < 5  |
| Ethylbenzene                   | 100-41-4   | < 1  |

THE ITEMS LISTED BELOW ARE NOT CONTAINED IN MOST ENAMELS. SEE TABLE ON PAGE 2 TO DETERMINE WHICH COLORS CONTAIN THESE INGREDIENTS AND % WT.

| INGREDIENT NAME             | CAS #      | % | INGREDIENT NAME                               | CAS #      | % |
|-----------------------------|------------|---|-----------------------------------------------|------------|---|
| 1,3,5-Trimethylbenzene      | 108-67-8   | - | Light Aliphatic Solvent Naphtha               | 64742-89-8 | - |
| Aluminum                    | 7429-90-5  | - | Linseed Oil                                   | 8001-26-1  | - |
| Aluminum oxide              | 1344-28-1  | - | Naphtha, hydrodesulfurized heavy              | 64742-82-1 | - |
| Barium Sulfate              | 7727-43-7  | - | Nickel Antimony Titanium Rutile               | 8007-18-9  | - |
| Benzimidazolone Compound(s) | TS16251056 | - | Paraffinic Solvent                            | 64742-47-8 | - |
| Calcium Carbonate           | 471-34-1   | - | Polymerized Linseed Oil                       | 67746-08-1 | - |
| Carbon Black                | 1333-86-4  | - | Silicon Dioxide (amorphous)                   | 7631-86-9  | - |
| Copper                      | 7440-50-8  | - | Solvent Naphtha (petroleum), medium aliphatic | 64742-88-7 | - |
| Crystalline Silica          | 14808-60-7 | - | Talc                                          | 14807-96-6 | - |
| Ferric Oxide                | 1309-37-1  | - | Titanium Dioxide                              | 13463-67-7 | - |
|                             |            |   | Zinc                                          | 7440-66-6  | - |

### **III. HAZARDS IDENTIFICATION**

|                     | HMIS |
|---------------------|------|
| <b>HEALTH</b>       | 2 *  |
| <b>FLAMMABILITY</b> | 2    |
| <b>REACTIVITY</b>   | 0    |

0 = Least      1 = Slight      2 = Moderate      3 = High      4 = Extreme  
 \* = Chronic Health Effects

# **ADDITIONAL INGREDIENTS OF LETTERING ENAMELS -- Weight %**

| PRODUCT# | DENSITY<br>LBS/GL | V.O.C.†<br>LBS/GL | CARBON<br>BLACK | TITANIUM<br>DIOXIDE | BARIUM<br>SULFATE | 1,3,5-<br>TRIMETHYL-<br>BENZENE | PARAFFINIC<br>SOLVENT | COPPER | ZINC | FERRIC<br>OXIDE | SILICON<br>DIOXIDE<br>(AMORPHOUS) | ALUMINUM<br>OXIDE | OTHER |
|----------|-------------------|-------------------|-----------------|---------------------|-------------------|---------------------------------|-----------------------|--------|------|-----------------|-----------------------------------|-------------------|-------|
| 100-L    | 10.6              | 3.4               |                 |                     |                   | < 1                             |                       |        |      |                 |                                   |                   |       |
| 101-L    | 11.6              | 3.0               |                 | <40                 |                   | < 1                             |                       |        |      |                 |                                   |                   |       |
| 102-L    | 9.2               | 3.5               |                 |                     |                   | < 1                             |                       |        |      |                 |                                   |                   |       |
| 103-L    | 11.7              | 3.0               |                 | < 40                |                   | < 1                             |                       |        |      |                 | < 5                               | < 5               |       |
| 104-L    | 8.7               | 3.1               |                 |                     |                   | < 1                             |                       |        |      |                 |                                   |                   |       |
| 106-L    | 8.0               | 3.0               |                 |                     |                   | < 1                             |                       |        |      |                 |                                   |                   |       |
| 108-L    | 8.4               | 3.2               |                 |                     |                   | < 1                             |                       |        |      |                 |                                   |                   |       |
| 109-L    | 10.5              | 4.0               |                 |                     |                   | < 1                             | < 25                  | < 25   | < 5  |                 |                                   |                   | *     |
| 110-L    | 10.5              | 3.9               |                 |                     |                   |                                 | < 25                  | < 30   |      |                 |                                   |                   |       |
| 111-L    | 10.6              | 4.0               |                 |                     |                   |                                 | < 25                  | < 20   | < 10 |                 |                                   |                   | *     |
| 114-L    | 9.6               | 3.4               | < 1             | < 5                 |                   | < 1                             |                       |        |      | < 20            |                                   |                   |       |
| 115-L    | 9.2               | 3.3               | < 1             |                     |                   | < 1                             |                       |        |      | < 15            |                                   |                   | *     |
| 116-L    | 11.2              | 3.1               |                 | < 35                |                   | < 1                             |                       |        |      |                 | < 5                               | < 5               |       |
| 117-L    | 10.3              | 3.2               | <0.0            | < 20                |                   | < 1                             |                       |        |      | < 5             |                                   |                   |       |
| 118-L    | 11.3              | 3.0               |                 | < 35                |                   | < 1                             |                       |        |      |                 | < 5                               | < 5               |       |
| 120-L    | 11.8              | 3.0               |                 | < 40                |                   | < 1                             |                       |        |      |                 |                                   | < 5               |       |
| 124-L    | 10.5              | 3.6               |                 |                     |                   | < 1                             |                       |        |      |                 |                                   |                   |       |
| 130-L    | 11.3              | 3.5               |                 | <20                 | < 5               | < 1                             |                       |        |      |                 |                                   |                   | *     |
| 132-L    | 11.3              | 3.7               |                 | <15                 | < 5               | < 1                             |                       |        |      |                 |                                   |                   | *     |
| 134-L    | 11.0              | 3.7               |                 | <15                 | < 5               | < 1                             |                       |        |      |                 |                                   |                   | *     |
| 141-L    | 8.8               | 3.3               |                 | <15                 | < 5               | < 1                             |                       |        |      |                 |                                   |                   |       |
| 142-L    | 9.4               | 3.5               |                 | < 5                 |                   | < 1                             |                       |        |      |                 |                                   |                   | *     |
| 143-L    | 8.6               | 3.4               |                 | <10                 |                   | < 1                             |                       |        |      |                 |                                   |                   |       |
| 144-L    | 9.3               | 3.8               |                 | < 5                 |                   | < 1                             |                       |        |      |                 |                                   |                   | *     |
| 148-L    | 9.0               | 3.6               |                 |                     |                   | < 1                             |                       |        |      |                 |                                   |                   |       |
| 149-L    | 10.2              | 3.3               |                 | < 30                |                   | < 1                             |                       |        |      |                 | < 5                               | < 5               |       |
| 150-L    | 9.0               | 3.3               |                 | < 10                |                   | < 1                             |                       |        |      |                 |                                   |                   | *     |
| 151-L    | 11.3              | 3.0               |                 | < 40                |                   | < 1                             |                       |        |      |                 |                                   |                   |       |
| 152-L    | 9.0               | 3.4               |                 | < 15                |                   | < 1                             |                       |        |      |                 |                                   |                   | *     |
| 153-L    | 9.2               | 3.4               |                 | < 20                |                   | < 1                             |                       |        |      |                 |                                   |                   |       |
| 154-L    | 10.9              | 3.0               | <0.0            | < 35                |                   | < 1                             |                       |        |      |                 | < 5                               | < 5               |       |
| 155-L    | 8.2               | 3.5               |                 | < 5                 |                   | < 1                             |                       |        |      |                 |                                   |                   |       |
| 156-L    | 8.3               | 3.3               |                 | < 5                 |                   | < 1                             |                       |        |      |                 |                                   |                   |       |
| 157-L    | 8.8               | 3.3               |                 | < 15                |                   | < 1                             |                       |        |      |                 |                                   |                   |       |
| 158-L    | 8.3               | 3.0               | < 1             | < 5                 |                   | < 1                             |                       |        |      |                 |                                   |                   |       |
| 160-L    | 9.4               | 3.3               |                 | < 20                |                   | < 1                             |                       |        |      |                 | < 5                               | < 5               |       |
| 161-L    | 8.3               | 3.2               |                 | < 5                 |                   | < 1                             |                       |        |      |                 |                                   |                   |       |
| 162-L    | 8.2               | 3.5               |                 | < 5                 |                   | < 1                             |                       |        |      |                 |                                   |                   |       |
| 163-L    | 8.8               | 3.3               |                 | < 15                |                   | < 1                             |                       |        |      |                 |                                   |                   |       |
| 164-L    | 8.7               | 3.3               |                 | < 15                |                   | < 1                             |                       |        |      |                 |                                   |                   |       |
| 165-L    | 8.3               | 3.4               |                 | < 5                 |                   | < 1                             |                       |        |      |                 |                                   |                   | *     |
| 168-L    | 11.2              | 3.6               |                 | < 35                |                   | < 1                             |                       |        |      |                 | < 5                               |                   |       |
| 191-L    | 11.0              | 3.4               |                 | < 20                |                   | < 1                             |                       |        |      |                 |                                   |                   |       |
| 193-L    | 8.8               | 4.0               |                 |                     |                   | < 1                             | < 30                  |        |      |                 |                                   |                   | *     |
| 195-L    | 9.6               | 3.2               | < 1             | < 20                |                   | < 1                             |                       |        |      | < 5             |                                   |                   |       |
| 199-L    | 7.8               | 2.2               | <10             |                     |                   |                                 |                       |        |      |                 | < 5                               | < 5               |       |

|                  |      |     |     |    |    |    |    |    |    |    |    |    |   |
|------------------|------|-----|-----|----|----|----|----|----|----|----|----|----|---|
| Carcinogenicity: | IARC | Yes | Yes | No | No | No | No | No | No | No | No | No | * |
|                  | NTP  | No  | No  | No | No | No | No | No | No | No | No | No | * |
|                  | OSHA | No  | No  | No | No | No | No | No | No | No | No | No | * |

\* See "List of Other Additional Ingredients" at the end of this table for OTHER components.

† The VOC content is determined by using a percent solids basis, less water and exempt solvents, for adhesives, coatings and inks and the calculations of EPA Reference Method 24 or equivalent ASTM method approved by the executive office.

**\* LIST OF OTHER ADDITIONAL INGREDIENTS**

| PRODUCT# | OTHER INGREDIENT                              | CAS#       | PERCENT | CARCINOGENICITY      |
|----------|-----------------------------------------------|------------|---------|----------------------|
| 109-L    | Solvent Naphtha (petroleum), medium aliphatic | 64742-88-7 | < 5     | No                   |
| 111-L    | Solvent Naphtha (petroleum), medium aliphatic | 64742-88-7 | < 5     | No                   |
| 114-L    | Talc                                          | 14807-96-6 | < 5     | No                   |
| 115-L    | Crystalline Silica                            | 14808-60-7 | < 1     | Yes (IARC, NTP only) |
| 130-L    | Linseed Oil                                   | 8001-26-1  | < 5     | No                   |
| 132-L    | Linseed Oil                                   | 8001-26-1  | < 5     | No                   |
| 134-L    | Light Aliphatic Solvent Naphtha               | 64742-89-8 | < 5     | No                   |
|          | Linseed Oil                                   | 8001-26-1  | < 5     | No                   |
| 142-L    | Benzimidazolone Compound(s)                   | TS16251056 | < 5     | No                   |
|          | Calcium Carbonate                             | 471-34-1   | < 5     | No                   |
|          | Nickel Antimony Titanium Rutile               | 8007-18-9  | < 5     | No                   |
| 144-L    | Benzimidazolone Compound(s)                   | TS16251056 | < 5     | No                   |
|          | Nickel Antimony Titanium Rutile               | 8007-18-9  | < 5     | No                   |
| 148-L    | Benzimidazolone Compound(s)                   | TS16251056 | < 5     | No                   |
|          | Nickel Antimony Titanium Rutile               | 8007-18-9  | < 5     | No                   |
| 150-L    | Calcium Carbonate                             | 471-34-1   | < 5     | No                   |
| 152-L    | Calcium Carbonate                             | 471-34-1   | < 5     | No                   |
| 156-L    | Polymerized Linseed Oil                       | 67746-08-1 | < 5     | No                   |
| 165-L    | Naphtha, hydrodesulfurized heavy              | 64742-82-1 | < 5     | No                   |
| 193-L    | Aluminum                                      | 7429-90-5  | <20     | No                   |

**Routes of Entry:**

Inhalation, Absorption, Ingestion, Skin contact, Eye contact.

**Medical Conditions Aggravated:**

Eye disease, Skin disease including eczema and sensitization, Kidney disease, Liver disease, Digestive tract disease, Lung disease.

**Immediate (Acute) Health Effects:**

**Inhalation:**

Can cause moderate respiratory irritation, dizziness, weakness, fatigue, nausea and headache. This product may cause metal fume fever with resulting flu-like symptoms. Can cause severe central nervous system depression (including unconsciousness).

**Skin Contact:**

Can cause moderate skin irritation, defatting, and dermatitis.

**Eye Contact:**

Can cause moderate irritation, tearing and reddening, but not likely to permanently injure eye tissue.

**Skin Absorption:**

May cause irritation and minor systemic damage.

**Ingestion:**

Toxic if swallowed. May cause target organ failure and/or death. Can cause abdominal discomfort, nausea, vomiting and diarrhea. Aspiration of material into the lungs can cause chemical pneumonitis.

**Target Organ Acute Toxicity:**

Eyes, Skin, Respiratory System, Kidneys, Nervous System, Blood, Liver, Digestive Tract, Thyroid, Pituitary, Testes Stomach, Cardiovascular System, Bone Marrow, Lymphatic System.

**Long-Term (Chronic) Health Effects:**

**Inhalation:**

Upon prolonged and/or repeated exposure, can cause moderate respiratory irritation, dizziness, weakness, fatigue, nausea and headache.

**Skin Contact:**

Upon prolonged or repeated contact, can cause moderate skin irritation, defatting, and dermatitis. Not likely to cause permanent damage.

**Eye Contact:**

Upon prolonged or repeated contact, can cause moderate irritation, tearing and reddening, but not likely to permanently injure eye tissue.

**Skin Absorption:**

Upon prolonged or repeated exposure, harmful if absorbed through the skin. May cause severe irritation and systemic damage.

**Carcinogenicity:**

IARC classifies ethylbenzene as "possibly carcinogenic to humans" (2B). See Tables on pages 2 and 3 for information on other components.

**Target Organ Chronic Toxicity:**

Nervous System, Eyes, Skin, Respiratory System, Kidneys, Blood, Liver, Digestive Tract, Pituitary, Testes, Stomach, Cardiovascular System, Lymphatic System.

NOTICE - Reports have associated repeated and prolonged occupational overexposure to solvents with brain and nervous system damage. Intentional misuse by deliberately concentrating and inhaling the contents may be harmful or fatal.

Lifetime inhalation exposure of rats and mice to high concentrations of ethylbenzene (750 ppm) resulted in increases in certain types of cancer, including kidney, lung and liver tumors. Testicular adenomas were increased as were thyroid effects in rats at 750 ppm. Pituitary effects were observed in female mice at 250 ppm. These effects were absent when exposure was below 75 ppm ethylbenzene. The study does not address the relevance of these results to humans.

IARC has recently re-evaluated titanium dioxide as possibly carcinogenic to humans (Group 2B) based on animal studies. However, human studies available to date do not suggest that occupational exposure to titanium dioxide increases cancer risk. The ACGIH classifies titanium dioxide as A4 (not classifiable as a human carcinogen). NTP does not classify it as carcinogenic. IARC's evaluation shows inadequate evidence of carcinogenicity in humans, but sufficient evidence of carcinogenicity in experimental animals. The evidence shows that high concentrations of powdered and ultrafine titanium dioxide dust caused respiratory tract cancer in rats exposed by either natural inhalation or direct introduction into the lungs. However, the same results are observed in people working in dusty environments. Therefore, IARC extended this idea to workers with exposures to titanium dioxide dust, if there are insufficient dust control measures in place. Based on the IARC decision, Canadian officials have agreed that titanium dioxide is classifiable as WHMIS D2A (carcinogen), and that it is not necessary to wait for release of the full monograph. OSHA requires the status on US MSDSs to change within 90 days of publication in the IARC monograph volume 93.

Only product #115-L contains Crystalline Silica (see List of Other Additional Ingredients, page 3): Cutting, sanding or grinding dried or cured material may release particles of crystalline silica (quartz). Exposure to airborne particles may cause lung damage including a risk of cancer. Chronic exposure may result in chest pain, difficulty breathing, lung damage and silicosis. (Silicosis is the permanent deposition of silica in lung tissue that results in lung damage.) There may exist a relationship between silicosis and certain cancers.

This product contains pigments which may become a dust nuisance when removed by abrasive blasting, sanding or grinding. See additional information above in this section for products containing Crystalline Silica.

#### IV. FIRST AID

|                      |                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Inhalation:</b>   | Remove to fresh air. If breathing is difficult, have a trained individual administer oxygen. If not breathing, give artificial respiration and have a trained individual administer oxygen. Get medical attention immediately.                                                                                                                                                                                                            |
| <b>Eyes:</b>         | Immediately flush eyes with plenty of luke warm water for at least 20 minutes retracting eyelids often. Tilt the head to prevent chemical from transferring to the uncontaminated eye. Get immediate medical attention and monitor the eye daily as advised by your physician.                                                                                                                                                            |
| <b>Skin Contact:</b> | Wash with soap and water. Remove contaminated clothing and launder. Get medical attention if irritation develops or persists.                                                                                                                                                                                                                                                                                                             |
| <b>Ingestion:</b>    | Seek medical advice immediately. Provide ingredients information from Section II of this MSDS to the medical care provider. Contact your local Poison Control Center (listed in the telephone book), or dial the local "Emergency" (911) number for additional information. Do not induce vomiting unless instructed to do so by a physician or other competent medical personnel. Never give anything by mouth to an unconscious person. |

#### V. FIRE FIGHTING MEASURES

|                                                   |                    |                                                       |
|---------------------------------------------------|--------------------|-------------------------------------------------------|
| <b>Flammability Summary:</b>                      | <b>Combustible</b> |                                                       |
| <b>Flash Point:</b>                               | 41 °C;             | 106 °F                                                |
| <b>Autoignition Temperature:</b>                  | 226 °C;            | 439 °F                                                |
| <b>Lower Flammable/Explosive Limit, % in air:</b> | 1.0                | <b>Upper Flammable/Explosive Limit, % in air:</b> 6.0 |

|                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Fire Hazards:</b> | Empty containers that retain product residue (liquid, solid/sludge, or vapor) can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind or crush used containers. Do not expose containers or product to heat, flame, sparks, static electricity, or other sources of ignition. Any of these actions can potentially cause an explosion that may lead to injury or death. Dusts at sufficient concentrations can form explosive mixtures with air. Water Reactive. Material will react with water and may release a flammable gas. Vapors may be ignited by sparks, flames or other sources of ignition if material is above the flash point giving rise to a fire (Class B). Vapors are heavier than air and may travel to a source of ignition and flash back. This product, when dried or cured, may support combustion when subjected to sources of ignition or heat in sufficient amount. |
|----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

Some products contain Linseed Oil (see List of Other Additional Ingredients on page 3). Rags, steel wool or waste soaked with linseed oil may spontaneously catch fire if improperly discarded. Immediately after use, place rags, steel wool or waste in a sealed water-filled container.

|                             |                                                                                                                                                                                                                                                                                 |
|-----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Extinguishing Media:</b> | Use alcohol resistant foam, carbon dioxide, or dry chemical extinguishing agents. Water may be ineffective but water spray can be used to extinguish a fire if swept across the base of the flames. Water can absorb heat and keep exposed material from being damaged by fire. |
|-----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|                                    |                                                                                                                                                                                                                                                                                                                                                                                                       |
|------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Fire Fighting Instructions:</b> | Do not enter fire area without proper protection including self-contained breathing apparatus and full protective equipment. Fight fire from a safe distance and a protected location due to the potential of hazardous vapors and decomposition products. Flammable component(s) of this material may be lighter than water and burn while floating on the surface. Use water spray/fog for cooling. |
|------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## VI. ACCIDENTAL RELEASE MEASURES

### Health Consideration for Spill Response:

Exposure to the spilled material may be irritating or harmful. Follow personal protective equipment recommendations found in Section VIII of this MSDS. Additional precautions may be necessary based on special circumstances created by the spill including: the material spilled, the quantity of the spill, and the area in which the spill occurred. Also consider the expertise of employees in the area responding to the spill. Evaporation of volatile substances can lead to the displacement of air creating an environment that can cause asphyxiation.

### Spill Mitigation Procedures:

#### General Methods:

Prevent the spread of any spill to minimize harm to human health and the environment if safe to do so. Wear complete and proper personal protective equipment following the recommendation of Section VIII at a minimum. Dike with suitable absorbent material like granulated clay. Gather and store in a sealed container pending a waste disposal evaluation. Shut off ignition sources; including electrical equipment and flames. Do not allow smoking in the area.

#### Air Release:

Ventilate the area by opening door and/or turning on fans and blowers.

#### Water Release:

Avoid runoff into storm sewers and ditches that lead to waterways. If runoff occurs, notify proper authorities as required, that a spill has occurred. Retain all contaminated water for treatment.

#### Land Spills:

Avoid runoff into storm sewers and ditches that lead to waterways.

## VII. HANDLING AND STORAGE

### Handling:

Harmful or irritating; avoid overexposure to the material. Use only in a well ventilated area. As with all chemicals, good industrial hygiene practices should be followed when handling this material. Do not get in eyes, on skin and clothing. Use spark-proof tools and explosion-proof equipment. Ground and bond containers when transferring material. May form flammable dust-air mixtures. Guard against dust accumulation of this material. Remove contaminated clothing and wash before reuse. Launder work clothes frequently. "Empty" containers retain product residue (liquid and/or vapor) and can be dangerous. Minimize dust generation and accumulation. Follow all protective equipment recommendations provided in Section VIII. Avoid breathing material.

### Storage:

Store in a cool dry ventilated location. Isolate from incompatible materials and conditions. Keep container closed when not in use. Store in a cool place in original container and protect from sunlight. Keep away from sources of ignition. Limit quantity of material stored.

## VIII. ENGINEERING CONTROLS, PERSONAL PROTECTIVE EQUIPMENT AND EXPOSURE LIMITS

### Engineering Controls:

Local exhaust ventilation or other engineering controls are normally required when handling or using this product to avoid overexposure. See table at the end of this Section VIII below for exposure limits. Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. Explosion proof exhaust ventilation should be used. Facilities storing or using this material should be equipped with an eyewash and safety shower. Vapor concentrations should be monitored and controlled in accordance with 29 CFR 1910.1000.

### Protective Equipment:

#### Respiratory Tract:

If general or local exhaust ventilation is not available or sufficient to reduce exposure to below acceptable levels, then respiratory protection is required to avoid overexposure when handling this product. Wear a NIOSH approved respirator if any exposure is possible.

#### Eyes:

Wear safety glasses with side shields when handling this product. When the possibility exists for eye contact with splashing or spraying liquid, or airborne material, wear additional eye protection such as chemical splash goggles and/or face shield. Do not wear contact lenses. Have an eye wash station available.

#### Skin:

Wear protective gloves. Inspect gloves for chemical break-through and replace at regular intervals. Clean protective equipment regularly. Wash hands and other exposed areas with mild soap and water before eating, drinking, and when leaving work.

#### Protective Clothing:

Wear chemically resistant gloves and apron. (Consult your safety equipment supplier).

| CHEMICAL NAME          | CAS #     | ACGIH TLV                                                                                            | OSHA PEL                                                     | IDLH            |
|------------------------|-----------|------------------------------------------------------------------------------------------------------|--------------------------------------------------------------|-----------------|
| 1,2,4-Trimethylbenzene | 95-63-6   | No TLV                                                                                               | No PEL established                                           | Not determined. |
| 1,3,5-Trimethylbenzene | 108-67-8  | No TLV                                                                                               | No PEL established                                           | Not determined. |
| Aluminum               | 7429-90-5 | 10 mg/m3 TWA (metal dust)                                                                            | 15 mg/m3 TWA (total dust); 5 mg/m3 TWA (respirable fraction) | Not determined. |
| Aluminum Oxide         | 1344-28-1 | as Al: 10 mg/m3 TWA (The value is for total dust containing no asbestos and < 1% crystalline silica) | total dust: 15 mg/m3 TWA; respirable fraction: 5 mg/m3 TWA   | Not determined. |
| Barium Sulfate         | 7727-43-7 | 10 mg/m3 TWA (The value is for the total dust containing no asbestos and <1% crystalline silica)     | 15 mg/m3 TWA (total dust); 5 mg/m3 TWA (respirable fraction) | Not determined. |

|                                 |            |                                                                               |                                                     |                                                 |
|---------------------------------|------------|-------------------------------------------------------------------------------|-----------------------------------------------------|-------------------------------------------------|
| Benzimidazolone Compound(s)     | TS16251056 | No TLV                                                                        | No PEL established                                  | Not determined.                                 |
| Calcium carbonate               | 471-34-1   | No TLV                                                                        | No PEL established                                  | Not determined.                                 |
| Carbon black                    | 1333-86-4  | 3.5 mg/m3 TWA                                                                 | 3.5 mg/m3 TWA                                       | 1750 mg/m3 IDLH                                 |
| Copper                          | 7440-50-8  | fume: 0.2 mg/m3 TWA; dusts and mists, as Cu: 1 mg/m3 TWA                      | 0.1 mg/m3 TWA (fume); 1 mg/m3 TWA (dusts and mists) | dusts & mists as Cu: 100 mg/m3 IDLH             |
| Crystalline Silica              | 14464-46-1 | 0.05 MG/M3 TWA (This TLV is for the RESPIRABLE FRACTION of dust.)             | SEE TABLE Z-3                                       | Not determined.                                 |
| Ethylbenzene                    | 100-41-4   | 100 ppm TWA<br>125 ppm STEL                                                   | 100 ppm TWA; 435 mg/m3 TWA                          | 800 ppm IDLH (10 percent lower explosive limit) |
| Iron oxide                      | 1309-37-1  | as Fe: 5 mg/m3 TWA (welding fumes, dust, total particulate (N.O.C.))          | 10 mg/m3 TWA                                        | as Fe: 2500 mg/m3 IDLH                          |
| Light aliphatic solvent naphtha | 64742-89-8 | No TLV                                                                        | No PEL established                                  | Not determined.                                 |
| Light Aromatic Solvent Naphtha  | 64742-95-6 | No TLV                                                                        | No PEL established                                  | Not determined.                                 |
| Linseed Oil                     | 8001-26-1  | No TLV                                                                        | No PEL established                                  | Not determined.                                 |
| Nickel Antimony Titanium Rutile | 8007-18-9  | 0.2 mg/m3 (inhalable fraction of insoluble nickel compound); As Sb: 0.5 mg/m3 | As Ni: 1 mg/m3 8hr TWA; As Sb: 0.5 mg/m3 8hr TWA    | Not determined.                                 |
| Paraffinic solvent              | 64742-47-8 | No TLV                                                                        | No PEL established                                  | Not determined.                                 |
| Polymerized Linseed Oil         | 67746-08-1 | No TLV                                                                        | No PEL established                                  | Not determined.                                 |
| Silicon Dioxide (amorphous)     | 7631-86-9  | 10 mg/m3 TWA                                                                  | Respirable Dust: 20 mppcf                           | 3000 mg/m3 IDLH                                 |
| Titanium dioxide                | 13463-67-7 | 10 mg/m3 TWA                                                                  | 15 mg/m3 TWA (total dust)                           | Potential NIOSH carcinogen.                     |
| Zinc                            | 7440-66-6  | No TLV                                                                        | No PEL established                                  | Not determined.                                 |

## IX. PHYSICAL DATA

|                               |                                                                                                           |
|-------------------------------|-----------------------------------------------------------------------------------------------------------|
| <b>Appearance:</b>            | Liquid.                                                                                                   |
| <b>Odor:</b>                  | Aromatic                                                                                                  |
| <b>pH:</b>                    | N/A                                                                                                       |
| <b>Octanol/Water Coeff:</b>   | Not Determined.                                                                                           |
| <b>Solubility in Water:</b>   | Minimal                                                                                                   |
| <b>Vapor Density:</b>         | Heavier than air. Vapors that evolve from this product will tend to settle and accumulate near the floor. |
| <b>Evaporation Rate:</b>      | Slower than n-Butyl Acetate.                                                                              |
| <b>Density</b>                | See Table on page 2.                                                                                      |
| <b>V.O.C.</b>                 | See Table on page 2.                                                                                      |
| <b>Initial Boiling Point</b>  | 154 °C; 309 °F                                                                                            |
| <b>Initial Freezing Point</b> | N/A                                                                                                       |

## X. STABILITY AND REACTIVITY

|                                          |                                                                                                                                                                                                                                                                      |
|------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Stability Information:</b>            | Stable under normal conditions. Spontaneous combustion can occur with products containing linseed oil.                                                                                                                                                               |
| <b>Conditions to Avoid:</b>              | Sparks, open flame, other ignition sources, and elevated temperatures. Contamination. Contact with water. Avoid spontaneous combustion of contaminated rags and other easily ignitable accumulations (example: spray booth residue) by immediate immersion in water. |
| <b>Chemical Incompatibility:</b>         | Chlorine, Strong oxidizing agents, Strong acids, Strong alkalies, Water, Moisture, Ethylene oxide.                                                                                                                                                                   |
| <b>Hazardous Decomposition Products:</b> | Carbon dioxide, Carbon monoxide, Metal fumes, Hydrogen, Sulfur containing gases, Toxic fumes, Toxic gases.                                                                                                                                                           |

## XI. TOXICOLOGICAL INFORMATION

| Chemical Name                     | LD50/LC50                                                                                    |
|-----------------------------------|----------------------------------------------------------------------------------------------|
| Benzene, 1,2,4-trimethyl-         | Inhalation LC50 Rat : 18 gm/m3/4H; Oral LD50 Rat : 5 gm/kg                                   |
| Benzene, ethyl-                   | Oral LD50 Rat : 3500 mg/kg; Dermal LD50 Rabbit : 17800 uL/kg                                 |
| Carbon black                      | Oral LD50 Rat : >15400 mg/kg; Dermal LD50 Rabbit : >3 gm/kg                                  |
| Carbonic acid, calcium salt (1:1) | Oral LD50 Rat : 6450 mg/kg                                                                   |
| Mesitylene                        | Inhalation LC50 Rat : 24 gm/m3/4H                                                            |
| Solvent naphtha, light aromatic   | Oral LD50 Rat: 8400 mg/kg                                                                    |
| Xylene                            | Inhalation LC50 Rat: 5000 ppm/4H; Oral LD50 Rat: 4300 mg/kg; Dermal LD50 Rabbit: >1700 mg/kg |

## XII. ECOLOGICAL INFORMATION

|                  |                                                                                           |
|------------------|-------------------------------------------------------------------------------------------|
| <b>Overview:</b> | Care should be taken to minimize releases of any industrial chemicals to the environment. |
|------------------|-------------------------------------------------------------------------------------------|

### XIII. DISPOSAL CONSIDERATIONS

**Waste Description for Spent Product:****Disposal Methods:**

Spent or discarded material is a hazardous waste. The waste is ignitable.

Information in this MSDS is provided only as a guide. Consult with competent authority to determine proper waste disposal procedures. Clean up and dispose of waste and clean-up materials in accordance with all federal, state, and local environmental regulations.

**Potential EPA Waste Codes:**

D001

**Some Components Possibly Subjected to USEPA Land Disposal Restrictions:**

When disposing of unused products or any waste, the preferred options are to send to a licensed reclaimer or to permitted incinerators. There may be some other ingredients subject to LDR categories.

|                              |           |
|------------------------------|-----------|
| Zinc                         | 7440-66-6 |
| Xylenes (o-, m-, p- isomers) | 1330-20-7 |
| Ethyl benzene                | 100-41-4  |

### XIV. TRANSPORTATION INFORMATION

**Agency Basic Description and Label**

DOT DOT by Land Transport: Not Regulated; DOT by Air and IATA (all modes): Paint, 3, UN1263, PG III, Label Required: Flammable Liquid

**Hazardous Substance**

|                               |                                                                                                                                                                          |
|-------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Copper                        | RQ = 5000 pounds (2270 kg); The RQ for these hazardous substances is limited to those pieces of the metal having a diameter smaller than 100 micrometers (0.004 inches). |
| Zinc                          | RQ = 1000 pounds (454 kg); The RQ for these hazardous substances is limited to those pieces of the metal having a diameter smaller than 100 micrometers (0.004 inches).  |
| Xylenes (isomers and mixture) | RQ = 100 pounds (45.4 kg); also listed as Xylene; also listed as Xylene (mixed); also listed as Benzene, dimethyl-                                                       |
| Ethyl benzene                 | RQ = 1000 pounds (454 kg)                                                                                                                                                |

### XV. REGULATORY INFORMATION

**Regulation**

|                              |                                                                                                                                                                                                                                                                                            |
|------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SARA 313 Reportable :        | Copper, Aluminium (fume or dust only), Zinc, 1,2,4-Trimethylbenzene, Xylene (mixed isomers), Ethyl benzene, Nickel Compounds, Antimony Compounds.                                                                                                                                          |
| TSCA Inventory :             | All components of this product are listed in, or exempt from, the TSCA 8(b) Inventory.                                                                                                                                                                                                     |
| M.S.D.S. Reportable HAP(s) : | Xylenes (isomers and mixture), Ethyl benzene, Nickel Compounds, Antimony Compounds.                                                                                                                                                                                                        |
| California Proposition 65 :  | The following statement is made in order to comply with the California Safe Drinking Water and Toxic Enforcement Act of 1986 - Proposition 65: "WARNING: This product contains chemical(s) known to the State of California to cause cancer and birth defects or other reproductive harm." |

### XVI. ADDITIONAL INFORMATION

**Major References:** VENDOR'S MSDS's, PAINT & COATINGS HANDBOOK, EPA's LIST OF LISTS, AND OTHER PUBLISHED MATERIALS.

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